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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/890,095      | 07/27/2001  | Gaku Sugahara        | 740819-605          | 6059             |

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EXAMINER

ZAHN, JEFFREY N

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 02/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/890,095

Applicant(s)

SUGAHARA ET AL.

Examiner

Jeffrey N Zahn

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2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

  
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**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Regarding Claims 1-15, these claims recite a semiconductor laser or method for fabricating a semiconductor laser within the preamble of the claims; however, the body of these claims does not have the structural elements or steps to support a semiconductor laser. Accordingly, these claims are vague and indefinite.

Regarding Claim 16, the claim recites a semiconductor laser; however, the structure necessary to support the claimed laser is not claimed. Specifically, a resonant cavity and reflective film are claimed, but their relationship to the semiconductor laser device is unclear/vague.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

**Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Caprara et al. (US 6285702).**

Regarding Claims 1-3, Caprara et al. discloses a semiconductor device comprising ;

a resonant cavity made of a plurality of semiconductor layers (32);

a reflective film which contains niobium oxide (col. 23, line 64- col. 24, line 10)

and is formed on an end facet of the resonant cavity. (Id.; see also Fig. 1);

the resonant cavity has a wavelength less than .7um (Id.)and the layer are made of Group III-V nitride semiconductors.

Regarding Claims 4-11, in addition to the discussion above regarding Claims 1-3, the reflective film is made of multiple layers that include SiO<sub>2</sub>, low refractive index layer, and Nb<sub>2</sub>O<sub>5</sub>, high refractive index layer. (col. 23, line 64-col. 24, line 10)

Regarding Claims 12-15, in addition to the discussion above regarding Claims 1-11, Caprara et al. discloses a method for fabricating a semiconductor laser device comprising the steps of:

forming a resonant cavity structure by sequentially depositing a plurality of semiconductor layers on a substrate (col. 24, lines 20-41);

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exposing an end facet of a resonant cavity on the semiconductor layers by cleaving or etching the substrate on which the semiconductor layers have been deposited (Id.); and

forming a reflective film containing niobium oxide on the exposed end facet of the resonant cavity (col. 23, line 65- col. 24, line 63).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caprara et al. in view of Yamanaka (US 5872759).**

Caprara et al. lacks a condensing optical system and a photodetector, as claimed. Yamanaka discloses an optical disk apparatus comprising:

a light-emitter including a semiconductor laser device (1);

a condensing optical system (4) that condenses laser light emitted from the light-emitter on a storage medium (5) on which data has been recorded (Fig. 2); and

a photodetector (3) that detects part of the laser light that has been reflected from the storage medium (5).


It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Capara et al. with the teachings of Yamanaka, as discussed above, to create an optical disk recording system (abstract)

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey N Zahn whose telephone number is 703-305-3443. The examiner can normally be reached on M-F: 8:30-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on 703-308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
Jeffrey Zahn  
February 9, 2003

  
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